

REMARKS

The Office Action dated January 22, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Following the current amendment, claims 1, 2, 4, 6-14, 16-19, and 21-39 are currently pending, including independent claims 1, 19, and 34-36, are currently pending for consideration. In particular, Applicants amended claims 10, 14, 19, 21, 25, 29, 30, and 33, and to added new claims 36-39. It is respectfully submitted that the claim amendments and additions add no new subject matter to the present application and serve only to more particularly point out and distinctly claim the invention. Applicants urge that all grounds for rejection in the Office Action have been addressed and that the present application is currently in condition for allowance in view of the claim amendments and additions and the following arguments. Therefore, entry of the amendments and additions, and reconsideration of claims are respectfully requested.

Rejection of the Claims under 35 U.S.C. §103(a)

The Office Action rejected claims 1, 2, 4, 6-14, 16-19, and 21-39 under 35 U.S.C. §103(a) as being allegedly obvious in view of U.S. Patent No. 6,415,323 (McCanne 1) in combination with U.S. Patent No. 6,611,872 (McCanne 2). According to the Office Action, McCanne 1 allegedly discloses all recitations of these claims except for the scheduling of a service process, but that this deficiency is cured by McCanne 2. However, as will be discussed below, each of the pending claims recites subject matter

which is neither disclosed nor suggested in the combination of McCanne 1 and McCanne 2. Applicants respectfully traverse this rejection and request that this rejection be withdrawn in view of the following arguments.

Independent claim 1, from which claims 2, 4, 6-14, 16-18 depend, recites a method that includes providing a service with a service process in a server. A service-specific anycast address is configured to a server interfaces on a communication link via which the server receives messages from a router or other servers. Furthermore, the service process and the service-specific anycast address configured interface are monitored. Then, the service process and the need for an advertisement message are scheduled, wherein the scheduling is configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message. Also, an advertisement message is sent when the service process is able to provide the service via the communication link to all other servers in response to the scheduling.

Independent claim 19, from which claims 21-33 depend, recites an apparatus that includes a service process configured to provide service on a communication link via which the server is adapted to receive messages from a router or other servers. A service-specific anycast address in the apparatus is configured to a server interface on the communication link. A monitor device monitors the service process and the service-specific anycast address configured interface. A service scheduling device schedules the service process and a need for an advertisement message. The service scheduling device is configured to take into account, when determining the need for an advertisement

message, any advertisement messages received to the service-specific anycast address from other servers. A sending device sends an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling of the service scheduling means.

Independent claim 34 relates to a computer program embodied on a computer readable medium. The computer readable medium stores code that includes computer executable instructions that includes providing a service with a service process in a server. A service-specific anycast address is configured to a server interface on a communication link via which the server receives messages from a router or other servers. The service process and the service-specific anycast address configured interface are monitored. The service process and the need for an advertisement message are scheduled. In particular, the scheduling takes advertisement messages received to the service-specific anycast address from other servers into account when determining the need for an advertisement message. Then, an advertisement message is sent when the service process is able to provide the service via the communication link to all other servers in response to the scheduling.

Independent claim 35 is directed to an apparatus that is configured to provide a service with a service process and to configure a service-specific anycast address to a server interface on a communication link via which the server receives messages from a router or other servers. Moreover, the server is further configured to monitor the service process and the service-specific anycast address configured interface. The server is additionally configured to schedule the service process and the need for an advertisement

message, wherein the scheduling is configured to take advertisement messages received to the service-specific anycast address from other servers into account in determining the need for an advertisement message. The server then sends an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling.

Independent claim 36, from which claims 37-39 depend, recites an apparatus that includes a service process configured to provide service on a communication link via which the server is adapted to receive messages from a router or other servers. A service-specific anycast address in the apparatus is configured to a server interface on the communication link. A monitoring means for monitors the service process and the service-specific anycast address configured interface. A service scheduling means schedules the service process and a need for an advertisement message. These service scheduling means are configured to take into account, when determining the need for an advertisement message, any advertisement messages received to the service-specific anycast address from other servers. A sending means sends an advertisement message when the service process is able to provide the service via the communication link to all other servers in response to the scheduling of the service scheduling means.

Applicants submit that the above-noted independent claims recite subject matter that is not taught or disclosed by either McCanne 1 or McCanne 2.

As described in the prior submitted Response, McCanne 1 relates to a proximity-oriented redirection system for service-to-client attachment in a virtual overlay distribution network. The solution includes a “redirector” coupled to at least one of the

addressable routers and includes: logic for accepting a service request from a client; logic for determining a selected server for handling the service request, the selected server being one of a plurality of servers that can handle the service request; and logic for generating a redirection message directed to the client for redirecting the service request to the selected server.

In particular, McCanne 1 concentrates on the functions of a redirector. The redirector is the element that distributes service requests between different service nodes (that actually provide the service). Thus, the solution disclosed by McCanne 1 relates to load balancing with the redirector. See, for example, McCanne 1 at col. 13, lines 14-17 and 21-23, as well as the issued claims.

Applicants urge that McCanne 1 does not anticipate the embodiments of the invention disclosed in the present application. As described above, claim 1 recites that each server schedules the sending of an advertisement message and takes into account in the scheduling advertisement messages received from other servers via the communication link. In contrast, McCanne 1 simply does not teach or disclose any special functionality in the servers providing the service. In other words, McCanne 1 does not teach that the load balancing is actually implemented in the servers because the router acts in response to the advertisement messages from the other servers.

In addition, claim 1 recites also that the service scheduling are configured to take into account, in determining the need for an advertisement message, advertisement messages received to the service-specific anycast address from other servers. Thus, the load balancing functionality is achieved by the functionality of the server farm servers

rather than in the router functionality. This recited aspect of the embodiment of claim 1 is also not disclosed or suggested in McCanne 1.

Furthermore, in the recited embodiment of claim 1, the load balancing is actually performed by the servers themselves. In particular, the recited embodiment of claim 1 achieves the load balancing functionality through the operation of the server farm servers. McCanne 1 does not provide any teaching toward such a solution and, instead, discloses a solution based on a router (*i.e.*, redirector) functionality, as described above. Accordingly, the recited solution of claim 1 is significantly different from the teachings of McCanne 1.

McCanne 1 discusses about a virtual overlay network topology. This is in contravention of the teachings of the invention at hand in which servers are on the same (communication) link. Furthermore, McCanne 1 emphasizes that service nodes are in the virtual overlay network instead of a physical internetwork [col. 4, lines 42-45]. This clearly teaches away from the “same communication link” architecture recited in claim 1.

In summary, Applicants note that McCanne 1 comprises common advertisement functionalities. As admitted in the Office Action, McCanne does not teach or suggest that the need for an advertisement message would be determined on the basis of received advertisements from other servers advertising the same services (and addresses).

While the Office Action admits that McCanne 1 does not disclose the scheduling the Office Action alleged that McCanne 2 defines the scheduling in col. 13 lines 59-62 and col. 16 lines 22-27. However, as described below, Applicants urge that McCanne 2 does not cure the above noted deficiency in McCanne 1.

McCanne 2 generally relates to an overlay protocol and system for allowing multicast routing in the Internet to be performed at the application level. The overlay protocol uses "native" Internet multicast and multicast routing protocols to route information, according to overlay routing tables. Overlay groups are mapped to native multicast groups to exploit native multicasting in regional or local forwarding domains. Use of the overlay protocol allows overlay distribution to be handled in a more intelligent and bandwidth-managed fashion. Overlay routers are placed at each of several local area networks, Internet service provider's point of presence, enterprise, or other cohesively-managed locations. The overlay computers are configured according to bandwidth and security policies, and perform application-level multicast distribution across the otherwise disjoint multicast networks by using the overlay routing. The result is an overlay multicast network that is effectively managed according to local network management policies. Application-level control can be applied to the transferred data at the overlay routers.

In particular, McCanne 2 defines in the cited portion at col. 13 lines 59-62 that *"end-host contacts the overlay router through specific fashion and establishes group members for a particular overlay group. The setup state...is specified in connection setup process, e.g. overlay group could be embedded in a Web URL and could be used within an overlay router to accept requests from senders and receivers to attach to the overlay network."* This, the portion of McCanne 2 cited in the Office Action at col. 16 lines 22-27 describes a type of scheduling for resources based on the resources.

The Applicants respectfully further notes that McCanne 2 does not provide any teaching towards a solution that would suggest that the need for an advertisement message would be determined on the basis of received advertisements from other servers advertising the same services. The Applicant further urges that it is not even possible to implement the recited embodiments of the present application in view of the system of the McCanne 1 and 2 references because this reference is directed to the clearly different intent of providing proximity based routing for the servers. In the present application, the servers are on the same link while the disclosure in McCanne 1 and McCanne 2 relate instead to virtual overlay networks in a broader scale.

In particular, claim 1 recites the scheduling as follows:

scheduling the service process and the need for an advertisement message, wherein the scheduling is configured to take advertisement messages received on the service-specific anycast address from other services into account in determining the need for an advertisement message.

As it can be noticed there is no scheduling part in col. 13 lines 59-62 of McCanne 2, as cited by the Office Action. Furthermore, McCanne 2 at col. 16 lines 22-27 teach that *“packets must be actively scheduled to ensure that all the traffic class policies and bandwidth allocations are adhered to.”* It is therefore evident that neither of the cited passages teaches the scheduling as disclosed in the invention at hand. Applicant further note that the scheduling is executed in the servers sending the advertisement messages.

In summary, the combination of McCanne 1 and McCanne 2 neither discloses nor suggests each and every of the recited features of claim 1. For at least this reason, Applicants urge that the rejection of claim 1 in view of the combination of McCanne 1

and McCanne 2 is clearly improper since this cited reference fails to teach or suggest each and every limitation recited in claim 1. Withdrawal of this rejection of claim 1 and reconsideration of this claim in view of these arguments are respectfully requested. Likewise, claims 2, 4, 6-14, and 16-18 depend from claim 1 and should be allowable over the combination of McCanne 1 and McCanne 2.

Likewise, independent claims 19 and 34-35, although different in scope from claim 1 and rejected on different grounds, likewise contains similar recitations related to the scheduling of a service. Thus, McCanne 1 and McCanne 2 similarly fail to teach or suggest each and every limitation recited in claim 19, and for at least this reason, Applicants urge that the rejection of claims 19 and 34-35 in view of McCanne 1 and McCanne 2 is clearly improper. Withdrawal of this rejection of claims 19 and 34-35 and reconsideration of this claim in view of these arguments are respectfully requested. Likewise, claims 20-33 depend from claim 19 and are also be allowable over McCanne 1 and McCanne 2 on the same basis.

Also, new claims 36-39, although different in scope from independent claims 1, 19 and 34-35, contain similar recitations related to the scheduling of a service. T. Thus, McCanne 1 and McCanne 2 similarly fail to teach or suggest each and every limitation recited in claims 36-39, and for at least this reason, Applicants request consideration and allowance of claims 36-39.

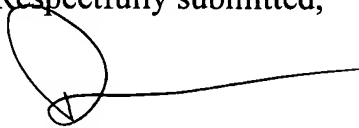
As discussed above, each of the pending claims 1-2, 4, 6-14, 16-19, and 21-39 are currently pending for consideration, including independent claims 1, 19, and 34-36, recites subject matter which is neither disclosed nor suggested in the cited references.

Applicants submit that the recited subject matter is more than sufficient to render the invention non-obvious to a person of ordinary skill in the art. It is respectfully requested that independent claims 1, 19, and 34-36 and the related dependent claims be allowed in view of the above arguments, comments, and remarks and that the present application be passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Additional Claims Transmittal
RCE Transmittal
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